

REPORT

7a.

OF

THE SEVENTH ANNIVERSARY

OF THE

MICROSCOPICAL SOCIETY

OF

L O N D O N ;

HELD AT

THE SOCIETY'S ROOMS, No. 21, REGENT STREET,

FEBRUARY 10TH, 1847.

L O N D O N :

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1847.



OFFICERS FOR THE YEAR 1847.

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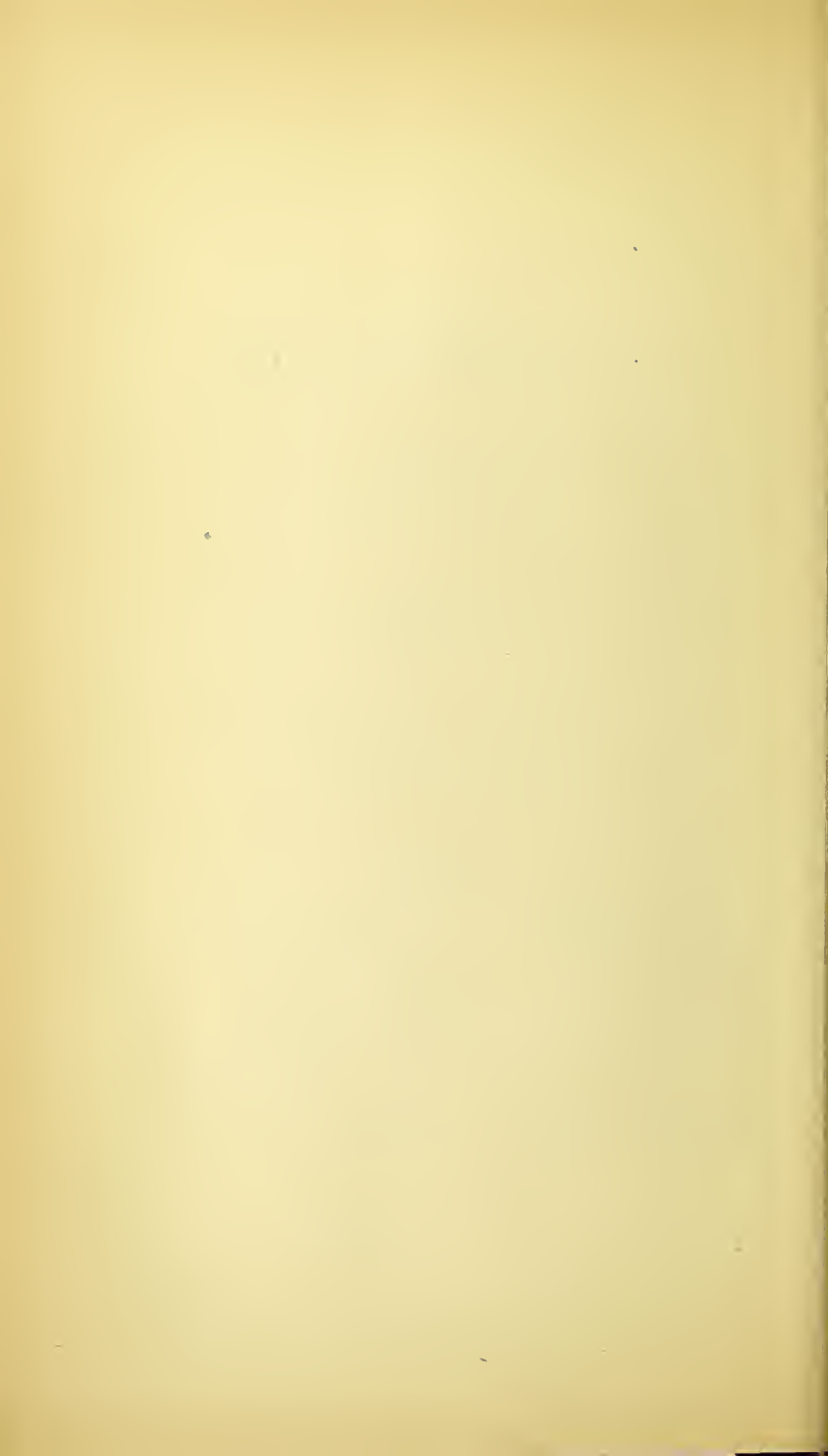
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E. J. QUEKETT, ESQ.

PROFESSOR FORBES.

ROBERT WARINGTON, ESQ.



R E P O R T.

THE Microscopical Society of London held their Seventh Annual Meeting, February 10th, 1847:—

J. S. BOWERBANK, Esq., President, in the Chair.

When the following Reports were read.

REPORT OF COUNCIL.

According to annual custom, the Council have to make the following Report on the state and progress of the Society during the past year.

The number of members stated in the last Report was 157. Since that time, fourteen ordinary members, one associate, and two honorary members have been elected, making a total of 174. This number is, however, reduced by the resignation of three members, and the Council have to regret the decease of two, making the actual total 169, and showing an increase of twelve in the present number beyond that of the last anniversary. The second part of

the second volume of the Transactions is in a state of forwardness, and will be distributed, as before, when ready. The rooms have been open on Wednesday during the session, and Mr. Leonard has been in attendance to superintend the employment of the microscopes by members of the Society; and when not so engaged, he has, as before, been employed in making drawings of objects of interest, and in preparing the plates for the Transactions. The number of microscopic objects in the cabinet amounts to 242, and the library consists of 52 works. There are also belonging to the Society various drawings and diagrams relating chiefly to papers read at the Society's meetings. The Council have also to mention, that tea, which was provided at the meetings of the Society during the last session, has also been continued in this, and they feel it scarcely necessary to add, that the expense is defrayed by a small subscription among the members.

REPORT OF AUDITORS.

We have examined the Treasurer's account, with the vouchers for the year ending the 7th instant, and find the balance in favour of the Society to be £129 12s. 6d., of which £4 11s. 2d. are in his hands, and £125 1s. 4d. with Lubbock & Co. The receipts and payments have been as follows.

JOS. J. LISTER, }
M. S. LEGG, } AUDITORS.

8th February, 1847.



The President then addressed the Meeting as follows :

GENTLEMEN,

I have much pleasure in congratulating you on the satisfactory Report that you have this day received from your Council, by which you will perceive that your funds are in a flourishing condition, although we have appropriated so large a portion of them to the publication of our Transactions, which, as they are delivered gratis to the members, necessarily yield us but a very small return by means of their sale.

The balance in the hands of the Treasurer remains within a small sum of what it was at the last anniversary. Nor is it advisable that it should at any time be greatly increased, a prudent reserve fund to meet contingencies being all that is desirable, while the remainder will be devoted to the best interests of the Society by being expended on illustrating our Transactions, increasing our stock of original drawings, the library, and our collection of objects, in as great a degree as possible.

The number of members now upon the books is 169, being an increase of twelve in our list since the last anniversary.

The presentations to the library and to the collection of

objects have, I regret to say, been but few in number ; but among the former may be mentioned, — Dana, on the Structure of Zoophytes ; Phillips, on Remains of Microscopical Animals in the Yorkshire Rocks ; and the Report on the Microscopical Structure of Shells, by Dr. Carpenter, as peculiarly interesting and valuable publications.

In the list of microscopical objects, I find that the greatest contributor has been our member Mr. Leonard, who has also, during the course of his attendance on Wednesdays, at the rooms of the Society, added two elaborate and very beautiful drawings to our portfolio, namely, a magnified drawing from an injected preparation of the foot of a newt, and a highly magnified section of human bone, besides having executed five lithographic plates to illustrate papers which will be published in the next part of our Transactions.

In regard to the increase of our stock of microscopic objects, I may be permitted to remind our members communicating illustrated papers, or exhibiting specimens, that it is peculiarly desirable that duplicates of both the drawings and the specimens, where it is possible, should be placed in the portfolio or cabinet of the Society, where they will become permanent vouchers of the accuracy of the descriptions, and of the claims of the authors to originality and priority of discovery.

Drawings of unknown forms, or of unique or rare objects, would also be peculiarly valuable ; or the loan of such objects to the Council, that sketches of them may be taken and published occasionally in our Transactions, accompanied by short memoranda of their discovery and probable origin. It is not necessary that, in the presentation of drawings of such objects, they should be elaborately and laboriously finished or coloured : in the majority of such cases, a faithful representation, and if possible by the

camera lucida, accompanied by a statement of the linear measurement of the object, is all that is required.

The papers read at the ordinary meetings of the Society have been varied and interesting. There have been five communications of an anatomical character, one botanical, two on the polarization of light, and one on manipulation.

The first and second of the anatomical papers are by our indefatigable and talented Secretary, Mr. John Quekett, and the subject one of the deepest interest, not only to the comparative anatomist, but also to the palæontological geologist, to whom it will be of invaluable service in all future investigations of obscure specimens of animal remains.

In the first of these communications, entitled "On the Intimate Structure of Bone in the four great Classes of Animals, viz. Mammals, Birds, Reptiles, and Fishes, with some Remarks on the great Value of the Knowledge of such Structure in classifying Minute Fragments of Fossil Organic Remains," after alluding to the highly important results obtained by Professor Owen, by the aid of the microscope, in determining the affinities of extinct animals by means of their teeth, the author went on to state that he had found certain characters, peculiar to each class, by which a bone of one could be distinguished from that of another. He then briefly described certain characters which are present in all bones, and then those which were peculiar to each class, namely, the Haversian canals and the bone-cells, with their little tubes proceeding from them, and he applied the characters derived from the bone-cells to the determination of the class of animals to which any minute fragments may have belonged; for he had ascertained that bone-cells were smallest in birds, a little larger in Mammalia, and largest of all in the Reptilia: the bone-cells of

fishes were remarkable for their being so unlike either of the three preceding classes, that, having been once seen, they could not easily be mistaken. The author then noticed the relative proportions of the bone-cells and blood corpuscles of the same animal, and concluded by remarking, that however different the size of animals of the same class may be, the bone-cells did not vary according to the difference of size. Thus the mighty iguanodon, some scores of feet in length, had no larger bone-cells than the lowliest lizard, nor the horse or ox than the smallest of our quadrupeds—the mouse.

In a second paper on the same subject, the author describes the continuation of his researches, and especially among some of the most anomalous species of the Reptilia, such as the Syren, Proteus, &c., strengthening the principles enunciated in the first paper, and confirming and establishing his views beyond the reasonable possibility of a doubt.

It was said of Cuvier, that give him but a bone and he would depict from it the animal to which it had belonged; by Mr. Quekett's investigations this principle is carried still further, for give him but a fragment of a bone and he will be enabled to refer the animal at once to its proper class.

Of all the valuable discoveries in minute anatomy which have been made by this gentleman, this latter one is perhaps of the greatest importance, and is alike a triumph to the investigator and the instrument through which it has been achieved.

Mr. John Quekett has also contributed a paper "On the Permanent Vascularity of the Posterior Capsule of the Crystalline Lens in certain Reptiles." After alluding to many of the animal tissues, some of which were pronounced to be vascular, while others were said to be unvascular, the

author classed amongst these last the cornea and crystalline lens, and then described briefly how the lens was inverted by a capsule, which was highly vascular in the foetal, but not in the adult state; but in the *Boa constrictor*, the snake, the toad, and the frog, he had always succeeded in filling the blood-vessels of the posterior capsule, which presented a very peculiar arrangement, the free border of the capsule being formed by a large vein, which communicated with another large vein, that returned the blood from the iris. The vessels of the conjunctiva, covering the cornea in the *Boa constrictor*, were also displayed.

The fourth paper is entitled "Observations on the Structure and Nature of the *Filaria Medinensis* or Guinea Worm," by G. Busk, Esq.

The author, before entering upon the anatomical structure of the worm, premised a short statement of what is known with regard to its habits, and the localities in which it occurs endemically, showing that it is found only in certain portions of the torrid and north temperate zones in Africa and Asia. It is especially frequent on the coast of Africa, and thence derives its vulgar name of Guinea worm. The structure of the worm was described. When perfect, its average length is from four to six feet; the body is cylindrical, and of uniform size, or nearly so, throughout; there is no anal or other opening visible at the caudal extremity of the worm, or in any part of its length. The cavity of the worm is occupied by innumerable young. In some worms, or in some parts of them, these occupy the whole space, whilst in others a grumous matter predominates, and only a few young are here and there imbedded in it.

The young *Filariæ* differ considerably in their outward form from the parent worm, being furnished with a long tapering tail, which constitutes about two-fifths of the

length of the body. The life of *Filaria Medinensis* as a parasite extends over from twelve to eighteen months. When arrived at maturity, it comes to the surface, and is either brought away or comes away piecemeal, thus affording an opportunity for the dispersion of the vivacious young with which its interior is crammed.

From these facts, the author suggested that *Filaria Medinensis*, in its parasitic form, presented an instance, among the nematoid Entozoa, of an intermediate or transition generation, such as have been shown to exist in most of the lower classes of animals by several naturalists, and especially by a Danish naturalist, Steenstrup, whose work on the subject of alternating generations has recently been published, under the auspices of the Ray Society, from an excellent translation of the German by the talented author of this highly interesting and valuable paper.

The fifth of our anatomical papers is by our member, the Rev. J. B. Reade, "On the Stellate appearance of the Human Blood." In this communication the author describes the aspect assumed by the corpuscles of the blood when taken from the gums, which is said always to assume that peculiar stellate form, which is only occasionally found when obtained from other parts of the body. The subject is one of much obscurity, but of considerable interest, and well deserves the attention of anatomists.

Mr. E. J. Quekett has favoured us with a paper entitled "Some observations on the Microscopic appearance in Diseased Potatoes of the present Season." After some preliminary observations, Mr. Quekett stated, that upon examining a potato at the commencement of the disease, it will be observed, when a slice is made through its substance, that minute points, of a brown colour, of various sizes, will be detected on the cut surface. Should the disease be further advanced, the spots become larger, and

those on the outer surface are brownish-black. Upon examining, microscopically, very thin sections of the internal diseased portions, it can be seen that many of the cells, besides containing grains of starch, have, for the most part, their walls lined with a brown granular matter, the particles being very minute; and when the diseased parts have become very apparent, as on the exterior, it will be found that all the cells have the brown colour, and that masses of irregular grumous matter occupy their interior. If these sections be very narrowly examined, it may easily be seen that between the cells is a tube containing minute granules, which tube branches according to the interstices of the cells, and very often, when the walls of the cells are ruptured, the filaments cross and subdivide in the cavity of the cell. These appearances the author refers to the action of certain minute Fungi, which are probably species of the genus *Fusarium*. Mr. Quekett then proceeded to give the opinions of various persons as to the cause of these appearances, and concluded by giving his own reasons for supposing that the fungus was the primary cause of the disease.

Of the two papers on the polarization of light, that of Mr. King, of Ipswich, was first read: it is entitled "On a Method by which all Objects may be Polarized under the Microscope." The method consists in placing over the eye-piece of the instrument a double-image prism of moderate separating power. The field then appears to be edged by two *arcs* of less intensity than the centre. Upon placing on the stage a plate of selenite, each arc will assume one of the colours produced by it, say red and green, whilst the centre of the field remains colourless. By this arrangement many objects, which under ordinary circumstances remain colourless, display the most brilliant effects. The best power for this purpose is a two-inch object-glass.

Mr. King concluded with some remarks on the causes which operate in producing these effects, and on the advantage likely to result in the examination of delicate tissues.

The second paper is by our member, Mr. Legg, "On the Application of Polarized Light in Microscopic Observations." After noticing the observations of Dr. Brewster, respecting the advantages likely to be derived from the application of polarized light in the examination of delicate structures, the author described a series of polarizing apparatus which may be readily adapted to almost any microscope, consisting, first, of a bundle of plates of crown glass, from which the light is to be reflected at an angle of 56° , in which position one portion only of the light is reflected and another transmitted, each of which portions consists of light polarized in opposite planes; this is most useful in low simple powers: secondly, of a plate of tourmaline, as free from colour as possible, and cut parallel to the crystalline axis: and thirdly, a Nichol's or single-image prism, being a crystal of Iceland spar, cut into equal portions, and again united by means of Canada balsam, so as to throw out of the field of view one of the two images produced by the double refraction of the crystal: this he described as being the most eligible for the compound microscope, inasmuch as it is perfectly free from colour, and requires but little adjustment. He then went on to detail a series of experiments illustrating the most striking phenomena of double refraction, in which he employed a Nichol's prism placed under the stage, a double refractor adapted to the eye-pieces, a film of selenite, of uniform thickness, disposed according to its crystalline axis, and a plate of brass, perforated with a series of holes from about one-sixth to one-fourth of an inch in diameter. In the first of these experiments, in which the double-refracting crystal alone was placed over the eye-piece, two distinct

images appeared, one of which seemed to revolve round the other when the eye-piece was turned round, thus exhibiting the ordinary and extraordinary rays. In the second, the Nichol's prism was applied under the stage, the other arrangements remaining the same as on the first experiment: under these circumstances, upon turning the eye-piece, although two images were produced, in one part of the revolution but one was seen, and this at 180° from the first position: changes also take place at every alternate quadrant. In the third experiment, the selenite plate was interposed; the images were now coloured, and presented complementary colours at every quarter of the circle produced by the revolution of the eye-piece. When the hole in the piece of brass was of a large size, the images were seen to overlap, and white light was produced. Other experiments were described in which two double refractors were employed, and in these the series of images was doubled. The author concluded with some remarks on the service likely to be rendered to microscopical investigation by the employment of polarized light.

I congratulate the Society on the production of the papers on this subject, and I trust that we shall be favoured during the ensuing meetings with others of a similar character, as the subject is one which is but little understood by the greater number of microscopical observers, although capable of becoming a most powerful assistant to them in the examination of every class of minute bodies, organic as well as inorganic.

The only paper which we have had treating of manipulation is by John Anthony, Esq.: it is "On certain appearances observable in *Navicula*, from the Humber, by means of Oblique Transmitted Light." After some preliminary observations, in which the author stated, that in the examination of extremely delicate objects, by means of

direct transmitted light, many interesting particulars were either lost in the glare, or their peculiar structure but ill defined; and, also, that great uncertainty in the precise nature of the structure of various tissues had been the consequence of the difficulty of obtaining at pleasure that obliquity of light necessary for showing the exact structure of an object: he went on to state, that in his opinion there does exist a definite arrangement of oblique light, capable of constantly rendering a tissue distinctly visible, the existence of which may previously either have been only suspected or half believed by many. The principle is briefly this,—when oblique transmitted light is employed for the examination of structure, on which lines are invisible by direct light, or are at best but slightly visible, on placing the object in such a position that the lines in question are exactly at right angles to the illuminating rays, those lines will be at their greatest amount of distinctness. This position was illustrated by the Navicula of the Humber, one of the most delicate of objects, appearing under ordinary circumstances perfectly transparent; and four drawings of this object, in as many different positions, making a complete revolution of the field, as seen by the oblique method of illumination, were exhibited. In two of these, the lines were seen at right angles to the illuminating ray, while the shell had a different inclination, leading to the inference that there must be a double set of oblique lines; and this is seen to be really the case upon viewing the object in a position at right angles to the one just mentioned, where not only is a double set of lines distinctly visible, but another set of transverse lines, giving the whole the appearance of a delicate net-work. In order to bring out these appearances, it is necessary that the light should be very oblique; and the author recommends that it should be passed laterally through the bull's-eye,

so that the object in the field may appear of an intensely blue colour.

Since our last anniversary we have to regret the loss, by decease, of two of our members, Mr. Thomas Moody and Mr. George Loddiges. Of the former gentleman I have been able to obtain but very little information: the latter, Mr. Loddiges, was one of the original members of our Society, and a most active and zealous promoter of its establishment. He was also one of the earliest and most liberal patrons of the successive improvements which have taken place in the construction of achromatic combinations, and few men were better capable of detecting and appreciating their excellence. His general scientific knowledge was extensive, but the investigation of microscopic nature was one of his chief sources of pleasure, and he exhibited a peculiar skill and delicacy in the management of his instrument and the preparation of his objects. The leading occupations of his active mind were numerous and varied, and many of them, from their extent and importance, required considerable periods of time to complete, or pursue towards completion: in each of these he exhibited an example of unwearied patience and assiduity, and an energy of mind rarely equalled, as evinced in the noble establishment at Hackney, so admirably commenced by the late Mr. Conrad Loddiges, and successfully carried out by his two sons. Its reputation and extent, as to number of rare plants, is known and appreciated not only throughout Europe, but also in most parts of the globe. The palms, as a collection, are unrivalled: early in 1845 the catalogue included 264 species. The number of species and varieties of Orchideæ, in the same year, amounted to upwards of 1900, while the list of ferns was co-extensive with the other classes of rare and valuable plants. Mr. Loddiges' unbounded liberality towards the numerous public botanical

establishments of Europe made his name a passport through every large city of the Continent. He was also his own architect in raising the great palm-house at Hackney, which he raised with the assistance of his own workmen, — a novel and masterly example of skill and ingenuity. In conjunction with his brother, in 1818, he commenced the publication of the Botanical Cabinet, which consists of 2000 figures and descriptions of plants, all cultivated in the Hackney Nursery: 889 of the figures were drawn by Mr. G. Loddiges, the descriptive parts being furnished by his brother, Mr. W. Loddiges. A number containing ten plates was published every month, till the work was completed in twenty volumes. With an extensive knowledge of art, he possessed a correct and refined taste, and the productions of his pencil prove to what excellence he had attained as an artist. His collection of impressions of gems from the antique amounted to about 2300, principally selected and cast by himself; and he formed also a valuable collection of specimens of woods, cut and polished so as to exhibit their natural characters, which consisted of about 1000 specimens; but the principal collection, for the possession of which he was known to every ornithologist in Europe, was his unrivalled series of humming-birds, the number of species of which he had augmented to more than 200. The consummate taste displayed in the arrangement of these lovely objects of Nature is only surpassed by their own intrinsic brilliancy and beauty. He had for twenty years collected and recorded much valuable information respecting them, but nothing, I believe, was arranged in a state for publication, although it was his earnest desire to produce an extensive work illustrative of this interesting family of birds. He was a Fellow of the Horticultural Society nearly thirty years, and about seven years a vice-president. He took a very active part in the

councils and meetings, lending his valuable aid and experience, as well as contributing liberally many rare and interesting plants: his loss will be severely felt by the Society. In private life he was as much esteemed, by all who had the pleasure of his acquaintance, for his courtesy of manners, amiability of disposition, and extent of information, as he was valued in public society for the liberality and spirit with which he at all times aided the progress of botanical science.

My address, gentlemen, has nearly reached its termination; but I cannot conclude without a few observations on the progress of the improvement and manufacture of the instrument which it is the peculiar object of this Society to patronise.

Dr. Goring, in the *Exordium* to the first edition of *Microscopic Illustrations*, published in 1829, says, "Microscopes are now placed completely on a level with telescopes, and, like them, must remain stationary in their construction." Happily for us this prediction has not been fulfilled. In the month of January, 1830, Mr. Lister published his valuable paper, "On the Improvements of Achromatic Compound Microscopes," and upon the principles there enunciated have been founded nearly the whole of the great modern improvements of the instrument, effected by Messrs. Powell, Ross and Smith, aided and assisted at all times, in the most liberal and disinterested manner, by that happy combination of practical and theoretical knowledge of optics which exists in the mind of the talented author of the paper.

Admirable as were the combinations alluded to by Dr. Goring, in 1829, they are exceedingly inferior to those which we now possess, and which we, like the worthy Doctor, are perhaps inclined to believe are scarcely capable of being surpassed; but however beautiful the combinations

around us, let us hope that the same skill and talent which has wrought these great and valuable improvements in the instrument will continue to aid and assist the scientific world, by aiming at and achieving a still further degree of perfection.

The first of the modern achromatic combinations made in England were the excellent triplets constructed by the late Wm. Tulley, at the request of Dr. Goring, in the year 1824; and the first stand with double actions to the stage, made by Mr. Smith, under the direction of Mr. Lister, was, in 1823, probably for the purpose of mounting the above-mentioned triplets; but so slowly were these great improvements appreciated, that, in 1832, when I became acquainted with Mr. Tulley, he informed me that the instrument which he then constructed for me was but the fifth which he had produced; but from these germs let us mark with what rapid strides the knowledge and taste for these beautiful instruments have progressed, and we shall no longer be surprised at the vast stream of valuable communications on animal and vegetable anatomy and physiology, which have been of late years flowing through the British and Foreign Philosophical Journals and Transactions, extinguishing wild theories by the correctness of the observations and the beauty of the illustrations, and planting Science on the permanent basis of immutable truth.

Since the year 1836, there have been 724 of these beautiful instruments constructed by our three great makers, beside numerous adaptations of modern achromatic combinations to old instruments; and during the past year 99 achromatic microscopes have been made and disposed of by the same parties. Some of these have been sent to India, to America, and to other distant parts of the world, but by far the greater number have passed into the hands

of the members of the medical profession, to whom they have now become almost as necessary as the scalpel and the lancet.

There remains but one other observation which I am desirous of making with regard to the manufacture of the instrument, and that is, the great necessity for its production in the cheapest and most simple form. It is not beauty, complexity of structure, and exquisite finish in the brass-work, that the working naturalist requires, so long as we can secure steadiness and facility of action, with the beautiful achromatic combinations which are now so abundantly and certainly produced : the more simple and inexpensive the mountings are, the better, and I am quite certain that the manufacturers will best consult their own interests by the production of such instruments.

The thanks of the Meeting having been voted to the President for his Address, it was proposed by Mr. Marshall, and seconded by Mr. Jackson, that this Address be printed.

The Law relating to the Election of Officers was then read; and the Society proceeded to ballot for the Officers and four new members of Council for the year ensuing.

The Ballot having been taken, the following were declared elected.

OFFICERS.

PRESIDENT.—J. S. BOWERBANK, Esq.

TREASURER.—N. B. WARD, Esq.

SECRETARY.—JOHN QUEKETT, Esq.

ASSISTANT-SECRETARY.—Mr. JOHN WILLIAMS.

NEW MEMBERS OF COUNCIL.

PROF. ANSTED.

GEO. BUSK, Esq.

W. DE LA RUE, Esq.

M. S. LEGG, Esq.

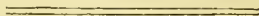
IN THE ROOM OF

ARTHUR HENFREY, Esq.

WM. GREENING, Esq.

R. H. SOLLY, Esq.

C. G. WHITE, Esq.



LIST OF MEMBERS.

- * Allcard, John, Esq., F.L.S., Stratford-green
- * Allcard, Edward, Esq., Myddelton-square, Pentonville
- * Aldous, Lens, Esq., 4, New-street, Kennington
Allan, Edwd. F., Esq., 50, Upper Norton-street
- * Amesbury, Joseph, Esq., 12, Devonshire-street, Portland-place
- * Ansell, T., Esq., F.L.S., Harley-place, Bow, Middlesex
Ansted, D. T., Esq., F.R.S., &c., Professor of Geology, King's College,
and 28, Sackville-street
Avery, John, Esq., 3, Queen-street, May-fair

- * Bagster, J., Esq., 15, Paternoster-row
Bagshaw, Robert John, Esq., 9, York-place, Portman-square
Bailey, Prof. J. W. (Hon.), West Point, New York
Bartlett, Wm., Esq., 19, Terrace, Notting-hill
- * Bean, Rev. J. P., St. Paul's School
- * Beck, Richard L., Esq., 5, Tokenhouse-yard
- * Bell, Thos., Esq., F.R.S., L.S., G.S., Z.S., &c., Prof. Zoology, King's
College, 17, New Broad-street
Bell, Fredk. John, Esq., F.G.S., 338, Oxford-street
Bentley, Edward, M.D., 35, Trinity-square, Southwark
- * Billing, Archibald, M.D., Grosvenor-gate, Park-lane
- * Birkett, John, Esq., F.L.S., 2, Broad-street Buildings

- * Bland, F. L., Esq., Anchor-terrace, Southwark
- * Bowerbank, Jas. Scott, Esq., F.R.S., R.A.S., G.S., Z.S., B.S., 3,
Highbury Grove, Islington
- Boyle, W. A., Esq., Grenville-square
- Brown, Fredk., Esq., 98, Warwick-street, Belgrave-road
- * Busk, George, Esq., Dreadnought, Greenwich
- Button, Charles, Esq., 146, Holborn-bars

- Callaway, Thomas, Jun., Esq., Wellington-street, London Bridge
- * Cameron, Hugh, Esq., Uxbridge-house, Old Burlington-street
- Cartwright, Samuel, Esq., F.R.S., L.S. and G.S., 32, Old Burlington-
street
- Children, John George, Esq., F.R.S., R.S.Ed., S.A., L.S., G.S., Z.S.,
&c., 48, Torrington-square
- Clark, Sir James, Bart., M.D., F.R.S., &c., Brook-street, Grosvenor-
square
- Cobb, F., M.D., St. Helen's-place, Bishopsgate-street

- * Dalrymple, John, Esq., Grosvenor-street
- * Darker, W. H., Esq., 9, Paradise-street, Lambeth
- * Dawnay, Hon. W. H., F.L.S., Bookham-grove, Surrey
- Davis, Richard, Esq., F.L.S., Z.S., 9, St. Helen's-place, Bishopsgate-
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- * Deane, Henry, Esq., Clapham-common
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- Dinsdale, Capt., Newsham-park, Durham
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- * Fairie, John, Esq., Park-road, Clapham
- Faraday, Michael, Esq., D.C.L., F.R.S., &c., &c., Fullerian Professor
of Chemistry in the Royal Institution of Great Britain, 21, Alber-
marle-street
- * Farre, Arthur, M.D., F.R.S., 22, Curzon-street, May-fair
- Few, William Edward, Esq., 31, Old Jewry
- Forbes, Edward, Esq., F.R.S., &c., Professor of Botany in King's
College, 6, Craig's-court
- Ford, Capt. John, Royal Hospital, Chelsea
- * Foulger, Samuel, Esq., 133, St. George-street, East
- Freebairn, J., Esq., Albany-house, Byefleet, Surrey
- * Fry, P. W., Esq., 14, Montague-street, Russell-square
- Fitzmaurice, G. L., Esq., 97, Gloucester-place, Portman-square

- Garle, John, Esq., 12, Kensington-terrace, Bayswater
- * Goddard, John F., Esq., 10, Exeter-street, Hawley-road, Camden-
town
- * Goldsworthy, J. H., Esq., High-street-place, Stepney
- Goodfellow, Stephen J., M.D., F.Z.S., Bedford-place
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